



2015 Aquatic Sciences Meeting

Aquatic Sciences: Global And Regional Perspectives — North Meets South

22-27 February 2015 — Granada, Spain

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ABSTRACT

DIEL VERTICAL MIGRANTS AND THE OCEAN CARBON PUMP: IS THERE A LADDER OF MIGRATION?

Active flux performed by migrant biota is still a gap in the knowledge of the biological pump in the ocean. These organisms mainly feed upon epipelagic zooplankton and transport this carbon due to their feeding at the shallower layers and their defecation, respiration, excretion and mortality at depth. The recent finding that mesopelagic fish biomass in the ocean is one order of magnitude higher indicates that the active flux should be thoroughly evaluated. Here, we show enhanced plankton biomass, ranging from bacteria to zooplankton, reaching down to 4,000 m depth below the Atlantic and Pacific equatorial upwelling systems. We also found a striking close relationship between the zooplankton backscatter enhancement in the epi-, meso- and bathypelagic zones. Backscatter increased in a similar proportion along the subtropical, tropical, and equatorial areas in the three zones. Literature, recent data in subtropical waters, and these results suggest an intense active carbon transport from the epipelagic layer to the deep sea driven by zooplankton and micronekton, enhancing the efficiency of the biological pump and promoting true carbon sequestration beyond 1000 m depth.

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DETAILS

Oral presentation

Session #:008

Date: 2/26/2015

Time: 15:45

Location: Auditorium Manuel de Falla (Floor 1)

Presentation is given by student: No



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